

REMARKS

Claims 1-4 and 6-21 were previously pending in the application and remain unchanged.

The Examiner rejected Claims 1-4 and 6-21 under 35 USC §112 as being indefinite and requested clarification for the term “circlip”. A “circlip” is generally defined as a clip that engages a groove on a shaft and axially locates the shaft in at least one direction. Applicants believe the term “circlip” would be readily understood by one of ordinary skill in the art. Applicants have enclosed several examples of circlips in Appendix A, including an entry from an online Science & Engineering Encyclopedia. (See <http://www.diracdelta.co.uk/>) A brief search of the U.S. Patent and Trademark Office online database uncovered over 2,600 patents issued since 1976 that include the term “circlip”. (See <http://www.uspto.gov/>) These examples were uncovered through cursory Internet searches and are provided merely as evidence that “circlip” is a term readily understood by one of ordinary skill in the art and they only. They are not intended to provide specific examples of circlips in the present invention that would limit the scope of the claims. Applicants hope this clarification is helpful and request the Examiner to contact the Applicants’ new Attorney identified below if any additional clarification is needed.

Claims 1-4, 6-11 and 14-15 were rejected under 35 USC §102(b) as being anticipated by Pauty (US 4,080,885).

Pauty does not disclose, among other things, a circlip as recited in the claims. Rather, Pauty discloses the lower end of the spindle (23) resting on the piston (33) comprising a square rod (34) sliding in a square hole (35). The piston (33) is lowered when the spindle (23) slides. The piston (33) of Pauty is not a circlip.

For these and other reasons, Pauty does not disclose the subject matter defined by independent Claims 1, 6 and 17. Therefore, Claims 1, 6 and 17 are allowable. Claims 2-4 and 16 depend from Claim 1 and are allowable for the same reasons and also because they recite additional patentable subject matter. Claims 7-15 depend from Claim 6 and are allowable for the same reasons and also because they recite additional patentable

subject matter. Claims 18-21 depend from Claim 17 and are allowable for the same reasons and also because they recite additional patentable subject matter.

CONCLUSION

In view of the above, Applicants respectfully request allowance of Claims 1-4 and 6-21. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Craig J. Loest", with a stylized flourish at the end.

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APPENDIX A

Science & Engineering Encyclopedia

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Circlip

A clip that fits in a groove on a shaft and locates the shaft axially in one direction.



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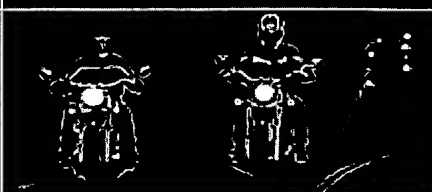
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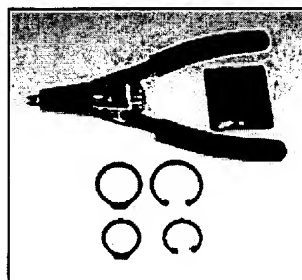
Circlip Science

What the do-it-yourself mechanic should know about circlips on his motorcycle.

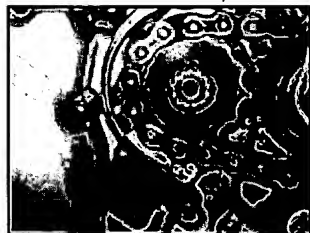
By Mark Zimmerman

Call them circlips, snap-rings, retaining rings or Jesus clips, they're all the same things. Essentially, circlips are flat pieces of circular spring steel used to retain components on shafts or in housings. Although they come in a variety of sizes and styles, fundamentally there are only two types: internal, which are typically used to hold a seal or bearing in its bore, and external, which are used to locate components on shafts.

Circlips are described by type and construction, i.e. internal or external, stamped, machined or wire. With the exception of the wire and machined clip, circlips normally have ears or tangs that accommodate special pliers so they may be removed and installed without damage.



Better circlip pliers handle both internal and external clips, and offer a multiple tips for different-size clips.



External circlips are often used to retain things that float on their shafts, such as countershaft sprockets. In this case the sharp edge of the clip should face away from the sprocket.

The most common circlip is stamped steel. It's also the most widely abused. During the manufacturing process, a chamfer is created on one side of the circlip and a square, sharp side on the other. Whenever the clip is installed, the sharp edge must face away from the direction of thrust. The sharp edge can be easily felt with your finger, so there are no excuses for not getting it right. Machined clips have two parallel surfaces so they can be installed any which way, as can round wire circlips.

Circlips are inexpensive, so any time one is removed, replace it with a new one. This is particularly true of the wire type, which is most often employed to hold piston pins in place, and the machined type, which can be difficult to remove without damage. It goes without saying that the proper tool should be used to avoid damaging the clip or your fingers.

Lastly, both metric and SAE sizes are available, but they are most definitely not interchangeable, so be careful not to confuse them.

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Quality
Endorsed
Company

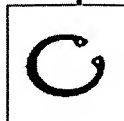


Formerly
Anderton®



Supplier

Circlips



Circlips were developed over 60 years ago as a cost saving alternative to fastening such as machined collars on shafts or washer and pin assemblies and still offer the same benefits of a single fastening mechanism by reducing material waste and the number of components. However, today there are many variations to the basic Internal and External types; developed out of the special needs of the consumer for various strength and design characteristics.

Types of Circlips

Basic Types

Radial Assembly

Compensating Axial Play

Snap Rings

Push-on Fix/Grip

Plain Wire

Shim/Washer

Material

Spring Steel

Stainless Steel

Phosphor Bronze

Finish

Phosphate & Oil

(Standard)

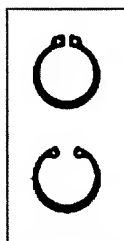
Mechanical Zinc

Plating (Optional)

Basic Types

Classic Circlips / Retaining Rings

The universally applicable rings for shafts and bores

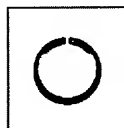


Metric **D1400** Metric Heavy Duty **D1460**
Imperial **N1400** Imperial Heavy Duty **N1460**

Metric **D1300**
Imperial **N1300**

Inverted Circlips

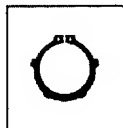
With a small radial height.
Simultaneously transferring
axial forces and serving as a
radial guidance



Metric **M1408**
Imperial **N1408**

Increased Abutment Rings

With equally distributed lugs
around the circumference suitable
for covered applications



Metric **D2100**

Handy Paks

Stainless Circlips

Metric Internal /
External **HP20**

External Circlips

Metric **HP05**,
HP05L
Imperial **HP06**

Internal Circlips

Metric **HP02**,
HP02L
Imperial **HP03**

Metric **M1308**
Imperial **N1308**

Metric **D2000**

Radial Assembly

Crescent Rings

In keeping with the principle of a single radial assembly 'E' ring. Large clasp angle.



Metric **M1800**
Imperial **N1800**

'E' Clips

The universally used radially assembled circlip for shafts. The groove is gripped by 3 tabs.



Metric **D1500**
Imperial **N1500**



Reinforced 'E' Clips
Imperial **N1540**

Handy Paks

'E' Clips
Metric **HP08**
Imperial **HP09**

'E' Clip /
Push-On Fastener
Imperial **HP1A**

Compensating Axial Play

Bevelled Circlips

As classic rings, however offering more application possibilities due to the bevel effect to compensate for axial tolerances.

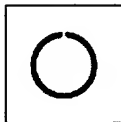


Imperial **N1302**

Snap Rings

Snaprings DIN 5417

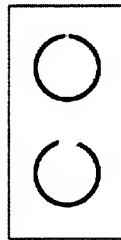
For shafts. The inner edges are radiussed for fixing of roller bearings with a groove and outer ring.



Metric **M3200**

Snaprings

For shafts and bores with small clearance.



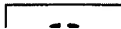
Metric **M2400**

Metric **M2300**

Push-on Fix/Grip

Grip Rings

High clamping force for a play-free retention on shafts without a groove. Easily removable, self locking grip rings.



Handy Paks

'E' Clip /
Push-On Fastener

Imperial **HP1A**

Push-On Fix Clip:

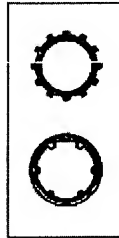
Metric **M1440**
Imperial **N1440**

Heavy Duty Push-On Fix
Strengthened version of the
toothed clip, transmitting
relatively high axial forces.



Metric **D4115**
Imperial **A4115**

Toothed Clips
Concentric design.
Small radial height,
for use against
softer materials.



Imperial **N1305**

Metric **M1465**
Imperial **N1465**

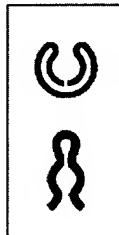
Plain Wire

Plain Wire Rings
Round cross section wire rings,
cold worked spring steel.
Especially suited for semi-
circular grooves with covering.



Imperial **A1000**

Special Wire Rings
For shafts

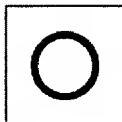


Imperial **A1200**

Imperial **A1100**

Support Washers, Shims
Shims DIN 988

A rigid means of reducing axial
play caused by manufacturing
tolerances. Stepwise thickness
combination.



Metric **Shims**

Support Washers
DIN 988

Manufactured from spring steel,
hardness HRC 44-49. Larger sizes
with ground faces.



Metric **Support Washers**